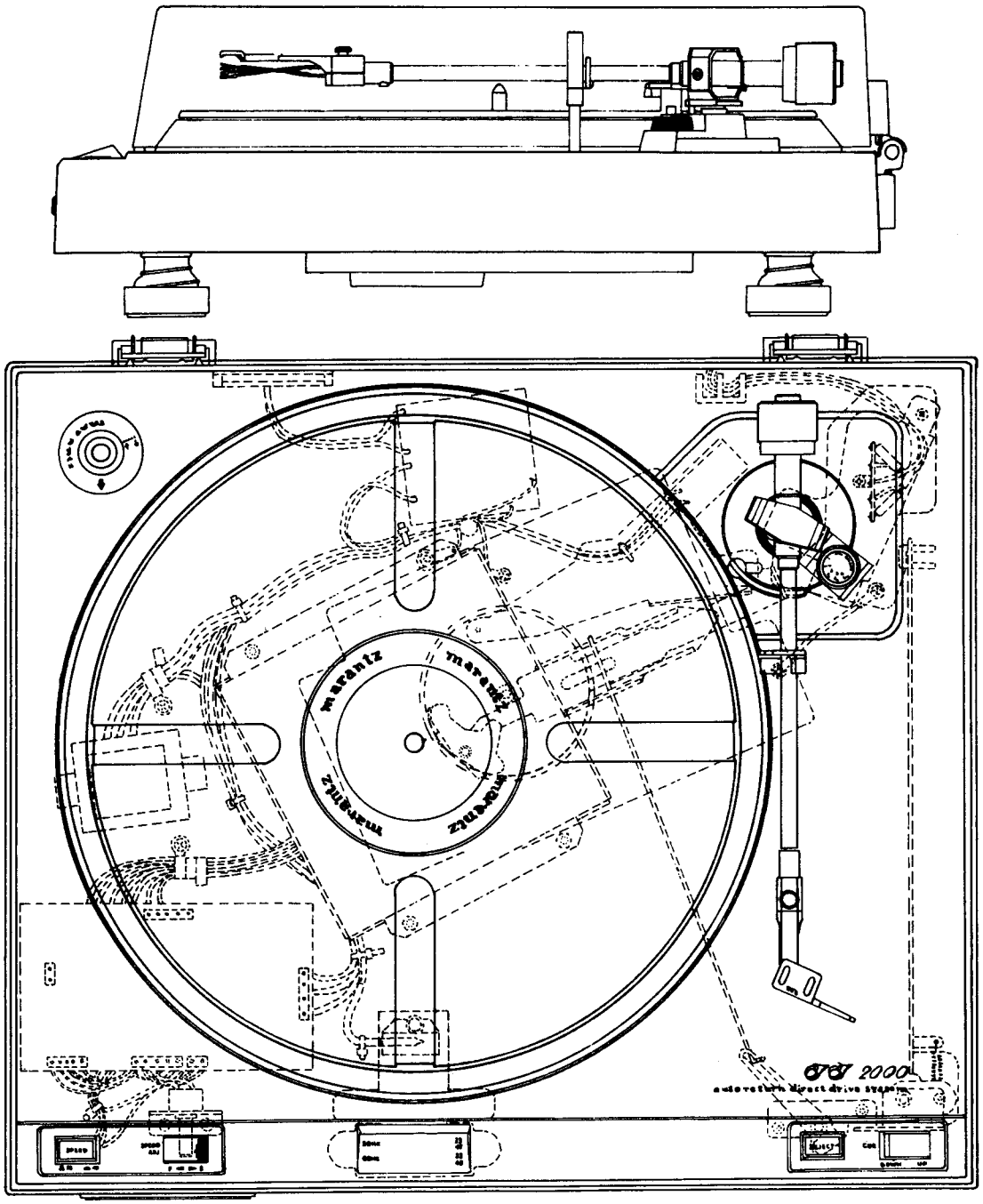
marantz®

TT-2000

service
manual



TT-2000

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Superscope
Technical
Services

MARANTZ DESIGN AND SERVICE

Using superior design and selected high grade components, MARANTZ Company has created the ultimate in stereo sound. Only original MARANTZ parts can insure that your MARANTZ product will continue to perform to the specifications for which it is famous.

Parts for your MARANTZ stereo are generally available within 72 hours throughout the nation via a toll-free line to our National Parts Depot in California. The sales professionals who take your call immediately refer to their own desk top computer terminal and can quickly determine the availability and price information you require. If, for some reason, your order should exceed our available stock, we usually can instantly provide an alternate replacement part or current delivery information. When the order is placed and confirmed, the computer simultaneously generates "hard copy" orders at the distribution center. As hard copies come directly from the computer to the national parts depot, your requested stock is assembled and prepared for shipment and placed on the first available carrier for delivery to you.

ORDERING PARTS

Phone orders will eliminate mail delays, and we encourage the use of this method. If you order by mail, use MARANTZ parts order forms which are available from our National Parts Depot located at the following address:

SUPERSCOPE NATIONAL PARTS DEPARTMENT
20525 Nordhoff Street
Chatsworth, California 91311
Phone: 1-800-423-5108
1-213-998-9333

The following information must be supplied to eliminate delays in processing your order:

1. Complete address.
2. Complete part numbers.
3. Complete description of parts.
4. Model number for which part is required (indicate MARANTZ).
5. Account number (for account customers only).

Direct consumers will be provided with the current retail price quotation on available parts in order to advise them of the cost of the parts and shipping.

OVERSEAS PARTS ORDERING

Parts may also be ordered from the following overseas addresses:

CANADA

Superscope Canada, Ltd.
3710 Nashua Drive
Mississauga
Ontario, Canada L4V1M5

AUSTRALIA

Superscope (Australasia) Pty., Ltd.
32 Cross Street (P.O. Box 604)
Brookvale 2100 N.S.W.
Australia

JAPAN

Marantz Japan, Inc.
3622 Kamitsuruma
Sagamihara Shi
Kanagawa, Japan

EUROPE

Superscope Europe, S.A.
Avenue Leopold III, 2
7120 Peronnes-Lez-Binche
Belgium

Marantz France
Rue Louis Armand 9
92600 Asnieres
Hauts-de-Seine
France

Marantz Audio U.K. Ltd
London Road, 203
Staines
Middlesex
England

Superscope GmbH
Max-Planck-Strasse 22
D-6072 Dreieich 1
West Germany

All of the above locations are fully equipped to take care of your total service needs. Because various countries have differing configuration requirements, it is necessary that you contact the service facility in your particular country. In the event that there is no service location listed for your country, please contact the nearest facility for the necessary assistance.

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SECTION 2. ALIGNMENT-ADJUSTMENTS

This service manual was prepared for qualified technicians familiar with Turntable maintenance and alignment procedure. Review complete adjustment sections before proceeding.

Cartridge Wire Color Code

Before installing a cartridge to the headshell, the wires should be connected to the cartridge. The cartridge or its technical sheet will identify the connection pins. It may be necessary to slightly compress the terminal clips on the headshell wires with your fingers to firm the contact area to the pins. Below is the headshell color-description.

Headshell Wires:

Right Channel Hot. . . . . .Red
Right Channel Ground . . . . . .Green
Left Channel Hot . . . . . .White
Left Channel Ground. . . . . .Blue

After wire connections are made, install cartridge mounting screws, provided with the cartridge, through the mounting slots and tighten firmly enough to hold the cartridge in place. Final adjustments are made after the overhang dimension is adjusted.

A. Stylus overhang adjustment
A 45 RPM adaptor is supplied with the TT2000 turntable that will be used for adjusting the overhang dimension. An arrow is marked on the 45 RPM ADAPTOR, and a gradient scale from 11 through 18.

1. Place the adaptor on the spindle with the arrow pointing towards the rear of the turntable. Gradient scale will be in the lower half quadrant when viewed from the front.
2. Remove stylus protective cover and balance the tone arm. Place the tone arm to the gradient scale and set stylus contact to gradient 17 mm on the 45 RPM ADAPTOR. Set the cartridge screws after checking that the cartridge is parallel to the sides of the headshell.

B. Stylus tracking force adjustment
1. Remove stylus protective cover. Adjust the counterweight until tone arm is capable of being suspended in midair without movement.
2. Set the counterweight dial to zero.
3. Rotate the counterweight towards the pivot point to the manufacturers specified cartridge tracking force.
4. Adjust the anti-skate control to the same force as the stylus tracking force.

C. Pitch—verification
1. Verify that the platter pitch control can be adjusted nominally from ±3.5% in both 45 and 33.3 RPM Modes.
2. Monitor that pitch control stabilizes Dot Patterns on the Platter. If adjustment is necessary, proceed to trouble shooting chart pitch adjustments.

D. Auto-return adjustment
If the Tone Arm returns before the end of the record program or delays to lift at end of record program, the sending arm can be adjusted as follows. REFER TO FIGURE (1)

1. To slightly delay tone arm return, adjust the fine adjustment screw clockwise.
2. To slightly advance tone arm return, adjust the fine adjustment screw counter clockwise.
3. When larger deviations are necessary, return fine adjustment screw to the middle of its travel.
4. Loosen the sending arm securing screws and adjust the tolerance between the actuating arm and sending-arm assy to 7 mm (.276in.). FIGURE (1)
5. Fine adjust tone arm return by repeating steps one or two, where applicable.

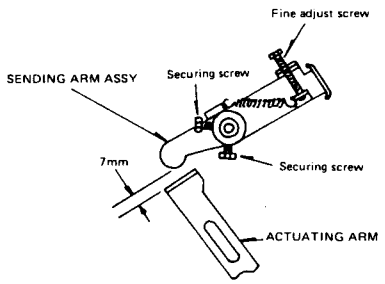


FIGURE (1)

SECTION 3. MOTOR REPLACEMENT PROCEDURE

1. Remove lead wires connected to pins 4,7-15
2. Remove the motor retaining screws on top of the turntable unit.
3. Remove the motor grounding wire.
4. Guide motor out of the unit

Reverse procedure for motor installation (Refer to FIGURE 2 for adjustment)

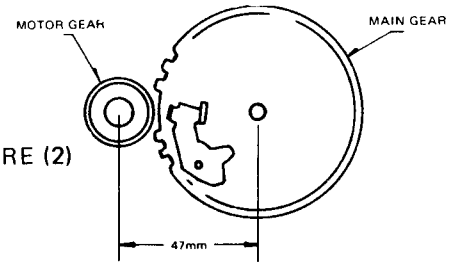
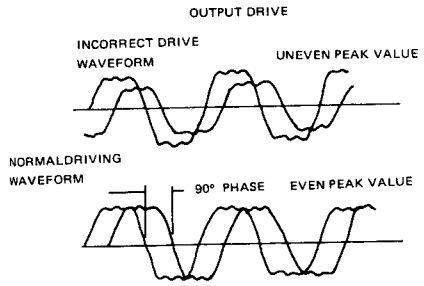


FIGURE (2)

1. Adjust Motor Pulley Distance from main gear (center to center) to 47 mm (1.850 in)
2. Adjust Motor gear to the center of main gear notch. (FIGURE 2)

Driving Waveform Adjustment

Adjusting resistors VR3, VR4, VR5 establishes IC2 operational offset and determines the hall element unbalanced output voltage. Below is a typical driving waveform output appearing at X6-B and X7-B.



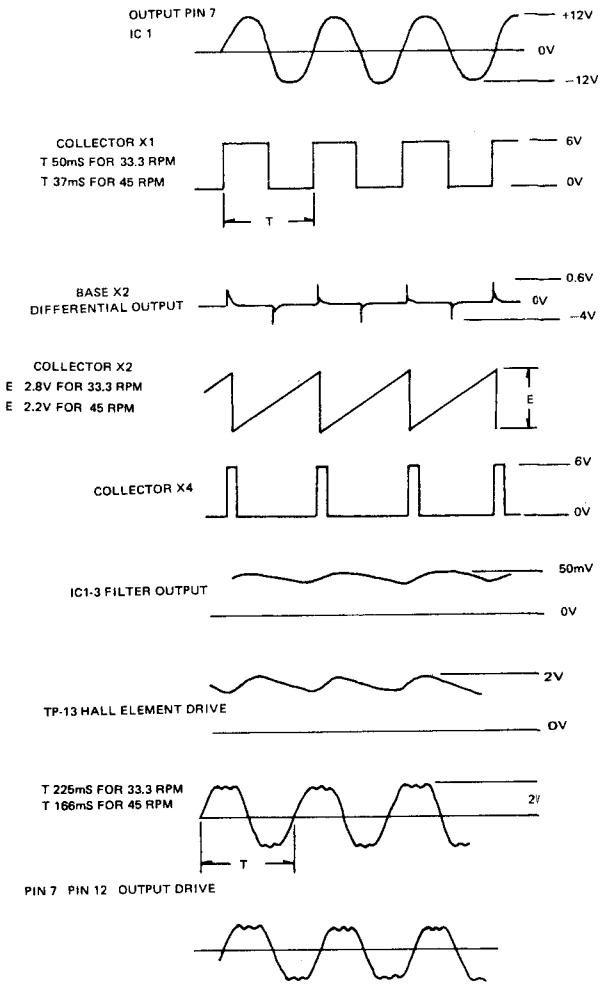
1. Use a dual beam scope with probes connected to X6-Base and X7-Base.
2. Superimpose signals from both channels on the scope.
3. Determine peak values and phase shift.

   a. If peak values are uneven, adjust VR3.
   b. If phase is not 90° adjust VR4, VR5.

   NOTE: Repeat several times as one adjustment will affect the other.

4. Connect a wow and flutter meter and fine adjust VR3, VR4, VR5 for minimum wow and flutter starting with VR3.

   NOTE: Turntable must be level for correct wow and flutter measurements.



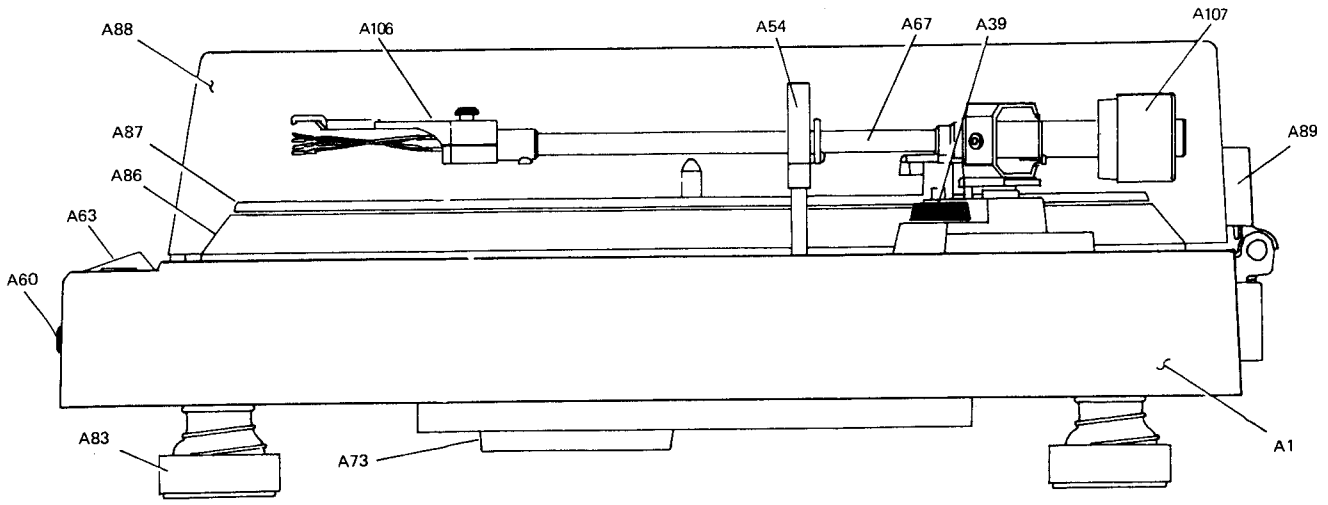
INTEGRATED CIRCUITS		
PIN NUMBER	IC1	IC2
1	0.8V	0V
2	0.2V	0.15V
3	0.2V	0.15V
4	−12.0V	−12.0V
5	0V	0.15V
6	0V	0.15V
7	0V	0.2V
8	+12.0V	+12.0V

TRANSISTORS			
COMPONENT	EMMITTER	BASE	COLLECTOR
X1	0V	0.9V	3.5V
X2	0V	0V	1.5V
X3	2.1V	1.4V	6.2V
X4	6.4V	6.8V	0.25V
X5	2.0V	2.5V	6.4V
X6 X7	0V	0.3V	+12.0V
X8 X9	0V	0.3V	-12.0V

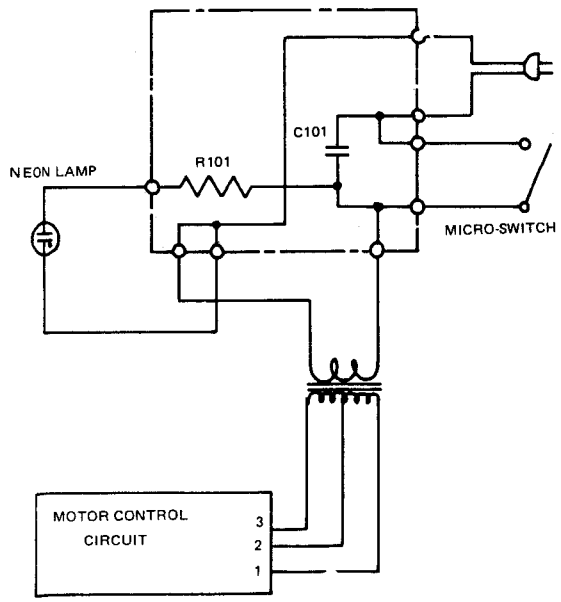
TT-2000 TROUBLE SHOOTING CHART

PROBLEM	SUSPECTED AREA	TASK
Stylus Remains in One Groove	1. Stylus Tracking Force 2. Tone Arm Lead Wires Binding 3. Dirty Clutch Plate-Guide	1. Adjust Stylus Tracking Force 2. Rearrange Lead wires 3. Clean Parts Thoroughly
Loud Sound Impact Heard On Return of Tone Arm	1. Main Gear Teeth	1. Check Gap Between Main Gear and Motor Gear 2. Check Clutch Plate, Guide, Actuating Arm and Base for Dirt or Binding
No Tone Arm Signal Output	1. Cartridge/Stylus 2. Leadwires 3. 5-Pin Terminal Strip 4. Cartridge Wiring	1. Replace 2. Check for Short or Open Wiring 3. Verify Wire Connections 4. Check for Broken Wires
One Channel Distorted	1. Stylus Tracking Force 2. Cartridge Position Incorrect 3. Anti-Skating Force	1. Readjust Tracking Force 2. Mount Cartridge Parallel to Sides of Headshell 3. Readjust Anti-skating Force
No Motor Turn On	1. Fuses 2. Power Supply Wiring	1. Check for Short Circuits and Replace Fuses 2. Check for Visible Wire Damage
Intermittent Motor Start	1. Intermittent Fuse-wiring 2. Intermittent Drive Transistors	1. Replace Fuse-Repair Wire 2a. Verify wavetorm @TP-13. 2b. Verify waveform @X6,X8 base. 2c. Verify waveform @X7,X9 base. 2d. Replace defective transistor if no signal @ TP-7,12.
Motor Speed Inaccurate	1. Speed Range Switch	1. Clean or Replace Switch
Pitch Will Not Hold	1. Pitch Control	1. Clean Pitch Potentiometer
Motor Speed Too Fast or Slow	1. VR1, VR2	1. Center Pitch Control and Adjust VR1-33RPM, VR2-45RPM
Motor Speed Too Fast or Slow	1. Incorrect Signal Form In Circuit	1. Verify Correct Waveforms Throughout Circuit after confirming correct DC Voltages
Tone Arm Returns to Arm Rest, Platter Remains on	1. Micro-Switch Adjustment	1. Adjust Gap Between Micro-switch and Sending Arm 0.8—1.2 mm
Reject Button Depressed But Tone Arm Does Not Return	1. Actuating Arm 2. Main Gear Drive	1. Check Reject Button, Spring, Lever Mechanism 2. Check Position of Motor Gear For Correct Position in Notch of Main Gear 3. Check Gear Teeth for Wear

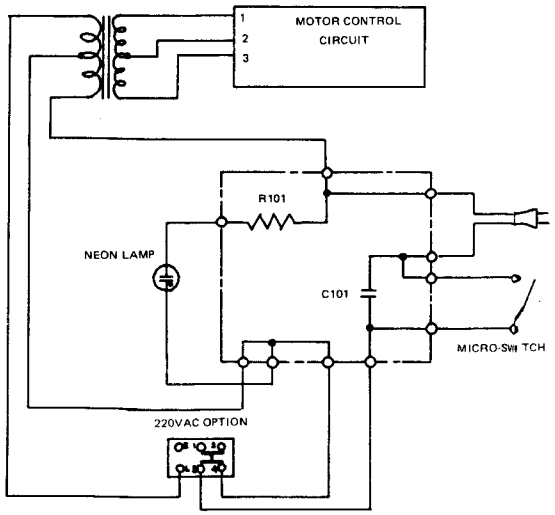
MAJOR COMPONENTS VIEW



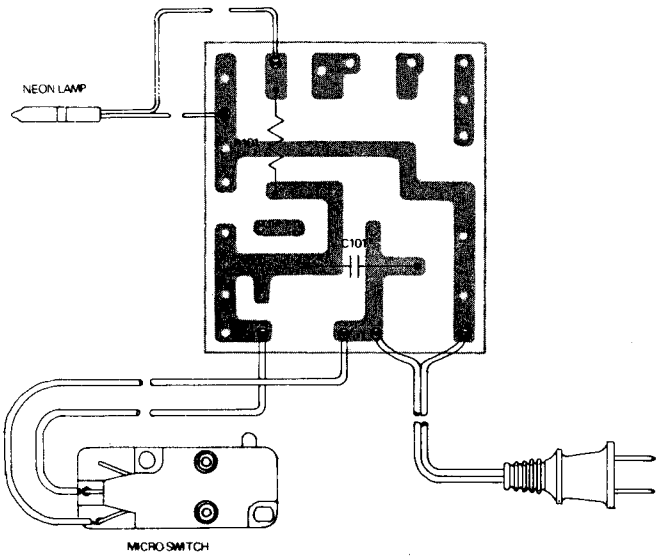
120VAC POWER SUPPLY SCHEMATIC



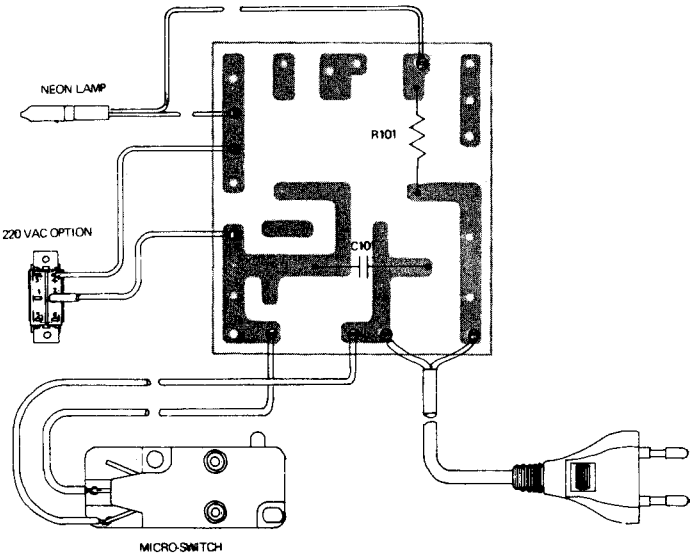
220VAC POWER SUPPLY SCHEMATIC

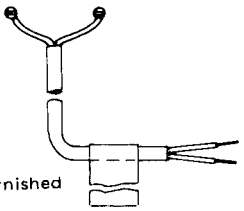


120VAC CIRCUIT BOARD



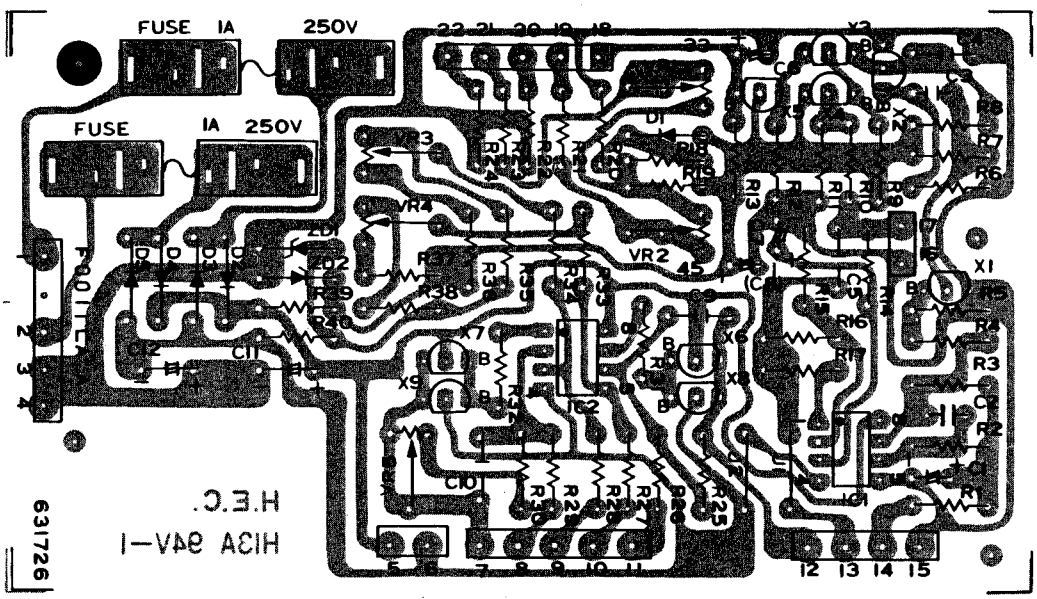
220VAC CIRCUIT BOARD

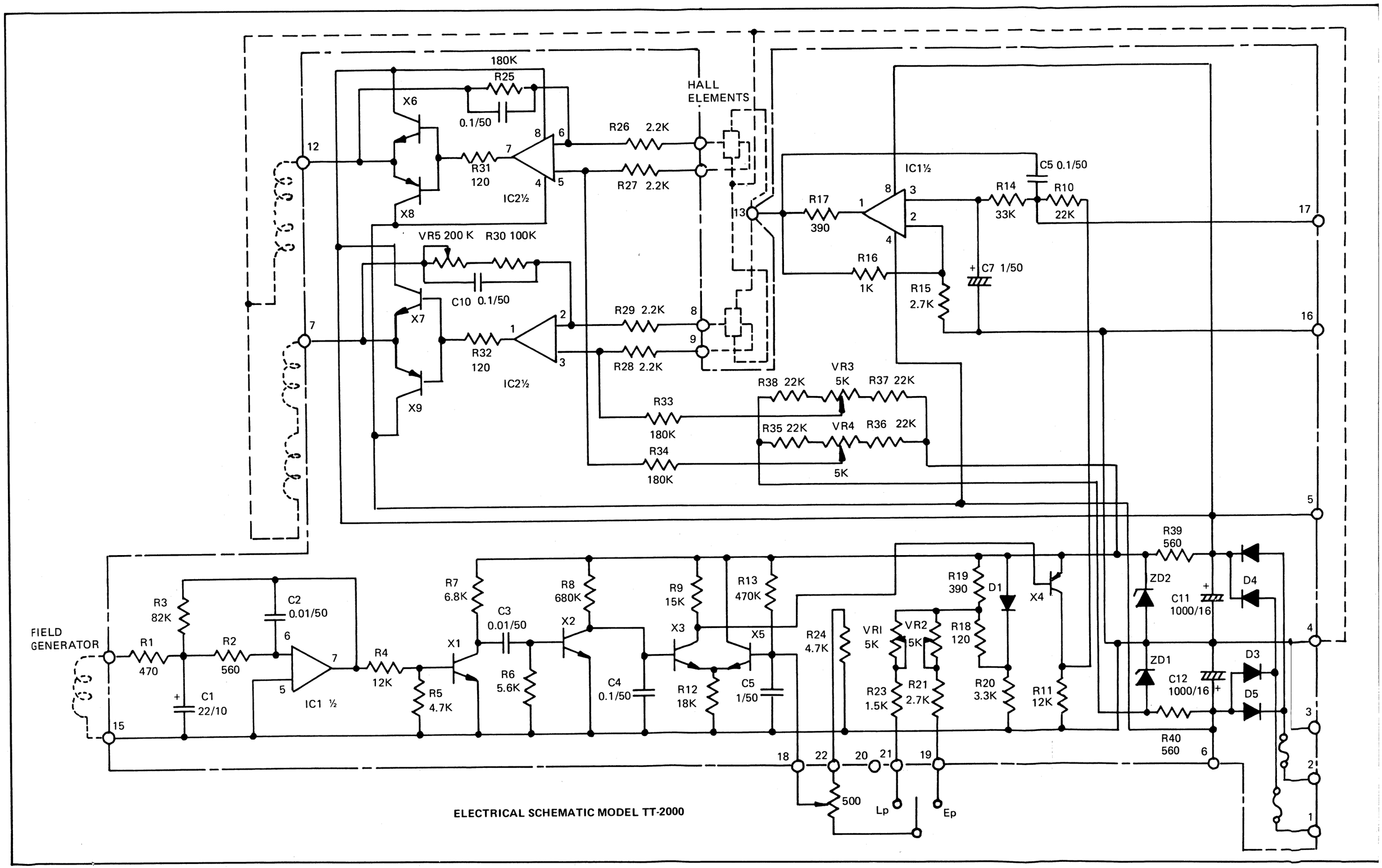




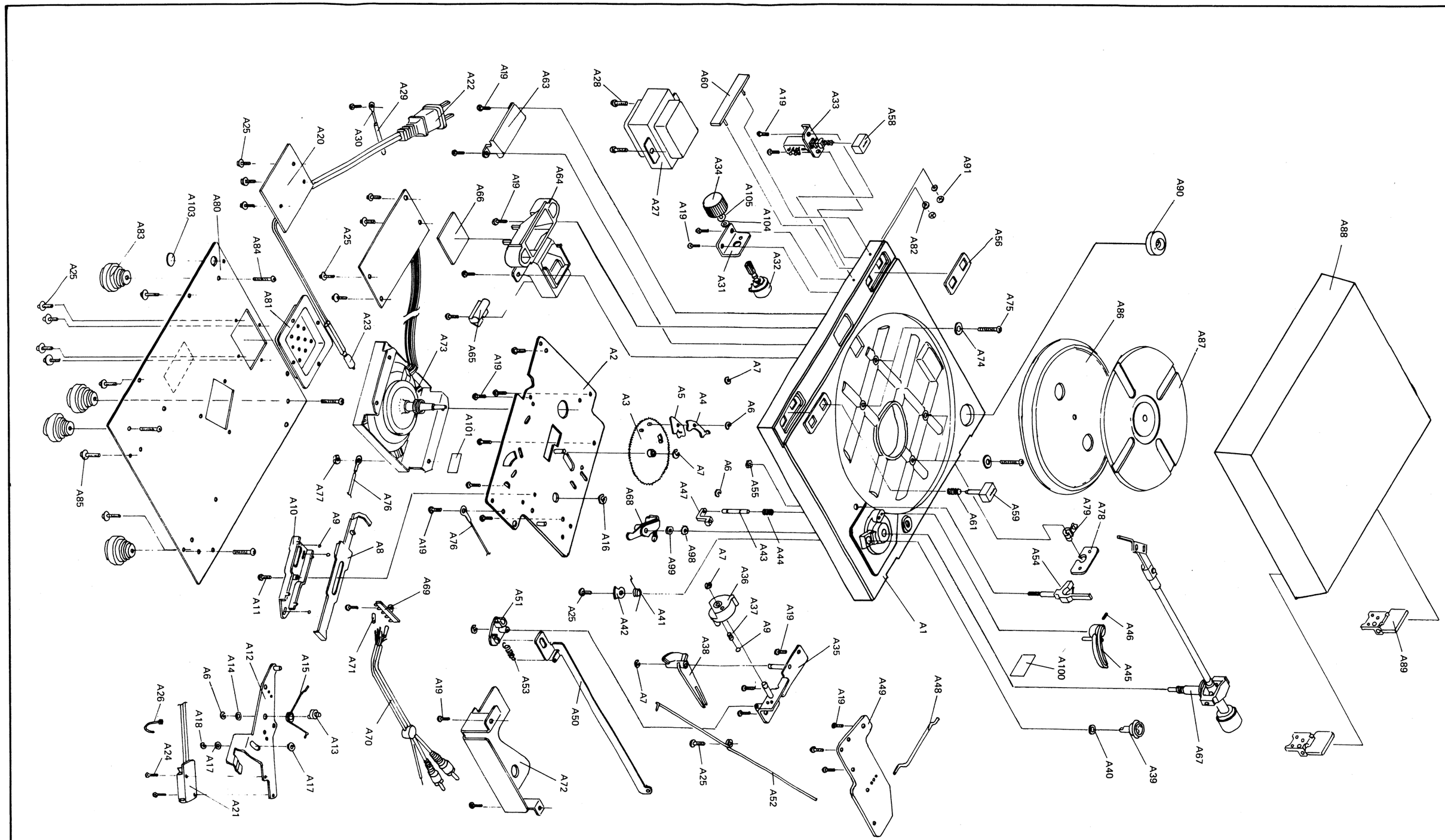
AC Power cord for Taiwain furnished without connector

MOTOR CONTROL CIRCUIT BOARD





ELECTRICAL SCHEMATIC MODEL TT-2000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U UNITED STATES
C CANADA
E EUROPE
T TAIWAN
A AUSTRALIA

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REF DESIG	QUANTITY U	C	E	T	A	PART NUMBER	DESCRIPTION
							MECHANICAL PARTS
A1	1	1	1	1	1	847306	CABINET CASE
A2	1	1	1	1	1	861641-2	SUB-CHASSIS ASSY
A3	1	1	1	1	1	895248	R-GEAR ASSY
A4	1	1	1	1	1	894901	CLUTCH PLATE
A5	1	1	1	1	1	894902	CLUTCH GUIDE
A6	3	3	3	3	3	ER00000030	E-RING, 3MM
A7	5	5	5	5	5	ER00000032	E-RING, 3.2MM
A8	1	1	1	1	1	870933-1	ACTUATING ARM
A9	4	4	4	4	4	39688MM000	BALL BEARING 3.9688MM
A10	1	1	1	1	1	870932-1	ACTUATING BASE
A11	1	1	1	1	1	SCW0003 x 12	SCREW, 3X12
A12	1	1	1	1	1	896487	FUNCTION PLATE ASSY
A13	1	1	1	1	1	895073	ECCENTRIC PIN
A14	1	1	1	1	1	WSHR 5 x 10	WASHER, 5X10X0.2
A15	1	1	1	1	1	895251	SPRING, COIL
A16	1	1	1	1	1	WSHR 6MM SPG	WASHER, 6MM-SPRING
A17	2	2	2	2	2	WSHR 32 x 10	WASHER, 3.2X10X0.5
A18	1	1	1	1	1		E-RING, 2MM
A19	33	33	33	33	33	SCW 3 x 8 TAPO	SCREW, TAP 3X8
A20	1	1		1	1	871536	BOARD ASSY, POWER SUPPLY
A20			1			871536-1	BOARD ASSY, POWER SUPPLY
A21	1	1				891340-1	MICRO-SWITCH
A21			1	1	1	895430-1	MICRO-SWITCH
A22	1	1				892435-1	AC POWER CORD
A22			1			896824	AC POWER CORD
A22				1		870913	AC POWER CORD
A22					1	897336	AC POWER CORD
A23	1	1				894001-3	NEON LAMP
A23			1	1	1	894001-1	NEON LAMP
A24	2	2	2	2	2	SCWRH 26 x 14	SCREW, RD HD 2.6X14M
A25	13	13	13	13	13	SCW 3 x 8 TAPM	SCREW, TAP 3X8M
A26	7	7	7	7	7	WRCLP 00001	WIRE FASTENER
A27	1					872261	TRANSFORMER, POWER
A27		1				872262	TRANSFORMER, POWER
A27			1			772264	TRANSFORMER, POWER
A27				1	1	872263	TRANSFORMER, POWER
A28	2	2	2	2	2	SCW RH 4 x 10M	SCREW, RD HD 4X10M
A29	3	3	3	3	3	890755	LUG, TERMINAL
A30	4	4	4	4	4	INSTUB 001	TUBING, INSULATION
A31	1	1	1	1	1	898325	BRACKET, VOLUME
A32	1	1	1	1	1	703062	POTENTIOMETER, 500 ohm
A33	1	1	1	1	1	872295	SWITCH, PUSH
A34	1	1	1	1	1	898326	KNOB, SPEED CONTROL
A35	1	1	1	1	1	898328	BRACKET, CUE ASSY
A36	1	1	1	1	1	898329	KNOB, CUEING
A37	1	1	1	1	1	E-287680	SPRING, CAM
A38	1	1	1	1	1	897818	LEVER REJECT
A39	1	1	1	1	1	898332	KNOB, ANTI-SKATE
A40	1	1	1	1	1	897554	WASHER, SPRING
A41	1	1	1	1	1	897445	SPRING, ANTI-SKATE
A42	1	1	1	1	1	897547	CAM, ANTI-SKATE
A43	1	1	1	1	1	898525	SHAFT, ELEVATION
A44	1	1	1	1	1	E832780	SPRING, ELEVATION
A45	1	1	1	1	1	897816	PLATE, ELEVATION
A46	1	1	1	1	1	SCW FT 26 x 4M	SCREW, FT-2.6X4M
A47	1	1	1	1	1	895676	ARM, CUEING
A48	1	1	1	1	1	898526	LEVER, CUEING
A49	1	1	1	1	1	898751	BASE, CUEING
A50	1	1	1	1	1	898334	ARM, CUEING
A51	1	1	1	1	1	898335	CAM, CUEING
A52	1	1	1	1	1	898527	SPRING, REJECT
A53	1	1	1	1	1	898533	SPRING, COIL
A54	1	1	1	1	1	897822	REST, TONE ARM
A55	1	1	1	1	1	NUT FG 0003M	NUT, FLANGE 3MM
A56	1	1	1	1	1	898336	NAME PLATE
A57	1	1	1	1	1	898337	NAME PLATE, CUEING
A58	1	1	1	1	1	898528	BUTTON, ASSY-PITCH
A59	1	1	1	1	1	898528-1	BUTTON ASSY-REJECT
A60	1	1	1	1	1	896838	LOGO
A61	1	1	1	1	1	892084-1	SPRING, COIL
A62	1	1	1	1	1	897843	SHAFT, REJ. BUTTON
A63	1	1	1	1	1	898339	WINDOW, STROBE
A64	1	1	1	1	1	872211	HOUSING, MIRROR
A65	1	1	1	1	1	897657-1	LAMP HOLDER
A66	1	1	1	1	1	898529	MIRROR
A67	1	1	1	1	1	851832	TONE ARM ASSY
A68	1	1	1	1	1	893583-3	SENDING ARM ASSY
A69	1	1	1	1	1	890979	TERMINAL STRIP, 5-PIN
A70	1	1	1	1	1	871474-2	CABLE ASSY, PHONO OUT
A71	2	2	2	2	2	INS TUB002	TUBE, INSULATION
A72	1	1	1	1	1	898752	PLATE, SHIELD
A73	1	1	1	1	1	DDM-511F-65	MOTOR ASSY
A74	4	4	4	4	4	WSHR SPCC-1	WASHER, SPCC-ZBC
A75	4	4	4	4	4	SCWRH 4 x 20M	SCREW, RD HD 4X20
A76	2	2	2	2	2	894383-1	GROUND WIRE ASSY
A77	1	1	1	1	1	FLN4	NUT, LOCKING 4MM
A78	1	1				892624-3	PLATE, AC-CORD
A78			1	1	1	893037-3	PLATE, AC-CORD
A79	1	1				891568-0	GROMMET, AC-CORD
A79			1	1		891568-3	GROMMET, AC-CORD
A79					1	891568-4	GROMMET, AC-CORD
A80	1	1	1	1	1	872212	LID, BOTTOM
A81	1	1	1	1	1	898530	COVER, TRANSFORMER
A82	2	2	2	2	2	893215	BUSHING, RUBBER
A83	4	4	4	4	4	895773-2	FOOT, RUBBER ABSORB
A84	4	4	4	4	4	SCWRD 4 x 14M	SCREW, RD HD, 4X14M
A85	11	11	11	11	11	SCWTP 4 x 14M	SCREW, TAP, 4X14M
A86	1	1	1	1	1	620060	PLANER, TURNTABLE
A87	1			1	1	872283	MAT, RUBBER
A87		1	1			872283-1	MAT, RUBBER
A88	1	1	1	1	1	851888-1	DUSTCOVER
A89	2	2	2	2	2	898532	HINGE ASSY
A90	1	1	1	1	1	898340	ADAPTOR, 45 RPM
A91	2	2	2	2	2	CS-3	WASHER, CLIP RETAINER
A92			1			896544-1	SWITCH, VOLTAGE CHANGE OVER
A93			1			702233-3	TUBE, INSULATION
A94			2			SCWRH-SPCO	SCREW, RD HD
A95			1			891799	PLATE, VOLT INDICATOR
A96			1	1	1	893327	INSULATION SHEET
A97			1	1	1	894756	COVER, SENDING ARM
A98	1	1	1	1	1	STW10	WASHER, STAR
A99	1	1	1	1	1	M10	NUT, NO10
A100	1					898341	LABEL, I.D.
A100		1				898341-1	LABEL, I.D.
A100			1			898341-2	LABEL, I.D.
A100				1		898341-3	LABEL, I.D.
A100					1	898341-4	LABEL, I.D.
A101	1					894783-2	LABEL, FUSE
A101		1				895019	LABEL, FUSE
A102	1					893389	LABEL, CAUTION
A102		1				895020	LABEL, CAUTION
A102			1	1	1	893389	LABEL, CAUTION
A103	1	1	1	1	1	898753	PAD, MASKING
A104	1	1	1	1	1	WSHR-SPCOO	WASHER
A105	1	1	1	1	1	M7	NUT, NO 7M
A106	1	1	1	1	1	HD SHLL 0001	HEAD SHELL
A107	1	1	1	1	1	CGWT 000060	COUNTER WEIGHT
							ELECTRICAL PARTS
							MOTOR CONTROL BOARD
	1	1	1	1	1	631726	BOARD ASSY, MOTOR CONTROL
							SEMI-CONDUCTORS
IC1,IC2	2	2	2	2	2	NJM4558D	OP AMP MPC 4558C
X1-3,5	4	4	4	4	4	2SC945	TRANSISTOR, 2SC945K,L
X4	1	1	1	1	1	2SA733	TRANSISTOR, 2SA733Q,P
X6,X7	2	2	2	2	2	2SD468	TRANSISTOR, 2SD468B,C
X8,X9	2	2	2	2	2	2SB562	TRANSISTOR, 2SB562
ZD1,ZD2	2	2	2	2	2	WZ061	DIODE, ZENER 6.1V-500MW
Z1	1	1	1	1	1	IS1210	DIODE, IS1210
Z2-5	4	4	4	4	4	W03B	DIODE, 100V-1A
							CAPACITORS
C2-3	2	2	2	2	2	SC2-01M2-50V	POLY FILM 0.01MF-50WV
C4,5,9,10	4	4	4	4	4	SC2-01M1-50V	POLYFILM 0.1MF-50WV
C1	1	1	1	1	1	SC1-22MO-25V	ELECTRO, 22MF-25WV
C6,7	1	1	1	1	1	SC1-01MO-50V	ELECTRO, 1MF-50WV
C11,12	2	2	2	2	2	SC1-1000-16V	ELECTRO, 1000MF-16WV

U UNITED STATES
C CANADA
E EUROPE
T TAIWAN
A AUSTRALIA

marantz

TT-2000

REF DESIG	QUANTITY U	C	E	T	A	PART NUMBER	DESCRIPTION
							RESISTORS
							RESISTORS ARE 1/4W-5% UNLESS OTHERWISE STATED
VR1-4	4	4	4	4	4	SR2-05KO-B	POTENTIOMETER, 5K ohm
VR5	1	1	1	1	1	SR2-200K-B	POTENTIOMETER, 200 K ohm
R1	1	1	1	1	1	SR1-0470-104	CARBON, 470 ohm
R2	1	1	1	1	1	SR1-0560-104	CARBON, 560 ohm
R3	1	1	1	1	1	SR1-82KO-104	CARBON, 825 K ohm
R4	1	1	1	1	1	SR1-12KO-104	CARBON, 12 K ohm
R5	1	1	1	1	1	SR1-47K1-104	CARBON, 4.7 K ohm
R6	1	1	1	1	1	SR1-56K1-104	CARBON, 5.6 K ohm
R7	1	1	1	1	1	SR1-68K1-104	CARBON, 6.8 K ohm
R8	1	1	1	1	1	SR1-680K-104	CARBON, 680 K ohm
R9	1	1	1	1	1	SR1-15KO-104	CARBON, 15 K ohm
R10	1	1	1	1	1	SR1-22KO-104	CARBON, 22 K ohm
R11	1	1	1	1	1	SR1-12KO-104	CARBON, 12 K ohm
R12	1	1	1	1	1	SR1-18KO-104	CARBON, 18 K ohm
R13	1	1	1	1	1	SR1-470K-104	CARBON, 470 K ohm
R14	1	1	1	1	1	SR1-33K0-104	CARBON, 33 K ohm
R15	1	1	1	1	1	SR1-27K1-104	CARBON, 2.7 K ohm
R16	1	1	1	1	1	SR1-01K0-104	CARBON, 1 K ohm
R17	1	1	1	1	1	SR1-3900-104	CARBON, 390 ohm
R18	1	1	1	1	1	SR1-1200-104	CARBON, 120 ohm
R19	1	1	1	1	1	SR1-3900-104	CARBON, 390 ohm
R20	1	1	1	1	1	SR1-33K1-104	CARBON, 3.3 K ohm
R21	1	1	1	1	1	SR1-27K1-104	CARBON, 2.7 K ohm
R23	1	1	1	1	1	SR1-15K1-104	CARBON, 1.5 K ohm
R24	1	1	1	1	1	SR1-47K1-104	CARBON, 4.7 K ohm
R25	1	1	1	1	1	SR1-180K-104	CARBON, 180 K ohm
R26-28	3	3	3	3	3	SR1-22K1-104	CARBON, 2.2 K ohm
R30	1	1	1	1	1	SR1-100K-104	CARBON, 100 K ohm
R31-32	2	2	2	2	2	SR1-1200-104	CARBON, 120 K ohm
R33-34	2	2	2	2	2	SR1-180K-104	CARBON, 180 K ohm
R35-38	4	4	4	4	4	SR1-22K0-104	CARBON, 22 K ohm
R39-40	2	2	2	2	2	SR1-5600-104	CARBON, 560 ohm
							MISCELLANEOUS
	1	1	1	1	1	LN-1250	TERMINAL BASE
	2	2	2	2	2	704842	FUSE HOLDER SN 5051
	2	2	2	2	2	896925-1	FUSE, 1 A.250V
	3	3	3	3	3	704841	TERMINAL ASSY, 5 PIN
	1	1	1	1	1	704841-1	TERMINAL ASSY, 4 PIN
	1	1	1	1	1	704841-3	TERMINAL ASSY, 2 PIN

REF DESIG	QUANTITY U	C	E	T	A	PART NUMBER	DESCRIPTION
							ELECTRICAL PARTS POWER SUPPLY BOARD
	1	1		1	1	871536	BOARD ASSY, POWER SUPPLY
			1			871536-1	BOARD ASSY, POWER SUPPLY
	1	1				392435-1	CORD ASSY, AC POWER
			1			896824	CORD ASSY, AC POWER
				1		870913	CORD ASSY, AC POWER
					1	897336	CORD ASSY, AC POWER
	1	1				894001-3	NEON LAMP
			1	1	1	894001-1	NEON LAMP
	1	1			1	891340-1	MICRO SWITCH, AM47009
			1	1		895430-1	MICRO SWITCH, AM47008
C101	1	1				896960	CAPACITOR, 0.047MF
C101			1	1	1	892428-2	CAPACITOR, 0.022MF
R101	1	1	1			895839-1	RESISTOR, 12 K ohm-2W
R101				1	1	895839	RESISTOR, 33 K ohm-2W
	2	2	2	2	2	704572	WRAPPING PIN
	6	6	6	6	6	703111	WRAPPING PIN
							PACKING MATERIALS
P1	1	1				851-947	MANUAL, INSTRUCTION
P1			1	1	1	851-984	MANUAL, INSTRUCTION
P2	1	1	1	1	1	851833	END PAD
P3	1	1	1	1	1	POLSHT0001	SHEET, POLY FOAM
P4	1	1	1	1	1	851888-1	DUST COVER
P5	1	1	1	1	1	891264-1	SHEET, POLYFOAM
P6	1	1	1	1	1	CGWT000060	COUNTER WEIGHT
P7	1	1	1	1	1	HDSHLL001	HEADSHELL
P9	1	1	1	1	1	898340	ADAPTOR, 45 RPM
P10	1	1	1	1	1	851834B	PARTSPAD
P11	1	1	1	1	1	851833	END PAD
P12	1	1	1	1	1	620060	PLATTER, TURNTABLE
P13	1	1	1	1	1	872283-1	MAT, PLATTER
P14	1	1	1	1	1	POLBG00001	POLY BAG
P15	1	1	1	1	1	851834A	PAD, LOWER
P16	1	1				851834	CARTON
			1	1	1	851834-1	CARTON
P17	1	1	1	1	1	872-363	PACKAGING SHEET

TT-2000
TECHNICAL SPECIFICATIONS
GENERAL

TYPE: Auto-return, direct drive system
FEATURES: Semi-automatic with strobe
POWER SOURCE 120V-60Hz 5 Watts Max.
DIMENSIONS 446(W) x 394(D) x 142(H) mm
PLATTER DIMENSIONS–WEIGHT: 320 mm–1.1KG
NET WEIGHT: 9KG Max.

MOTOR SPECIFICATIONS:

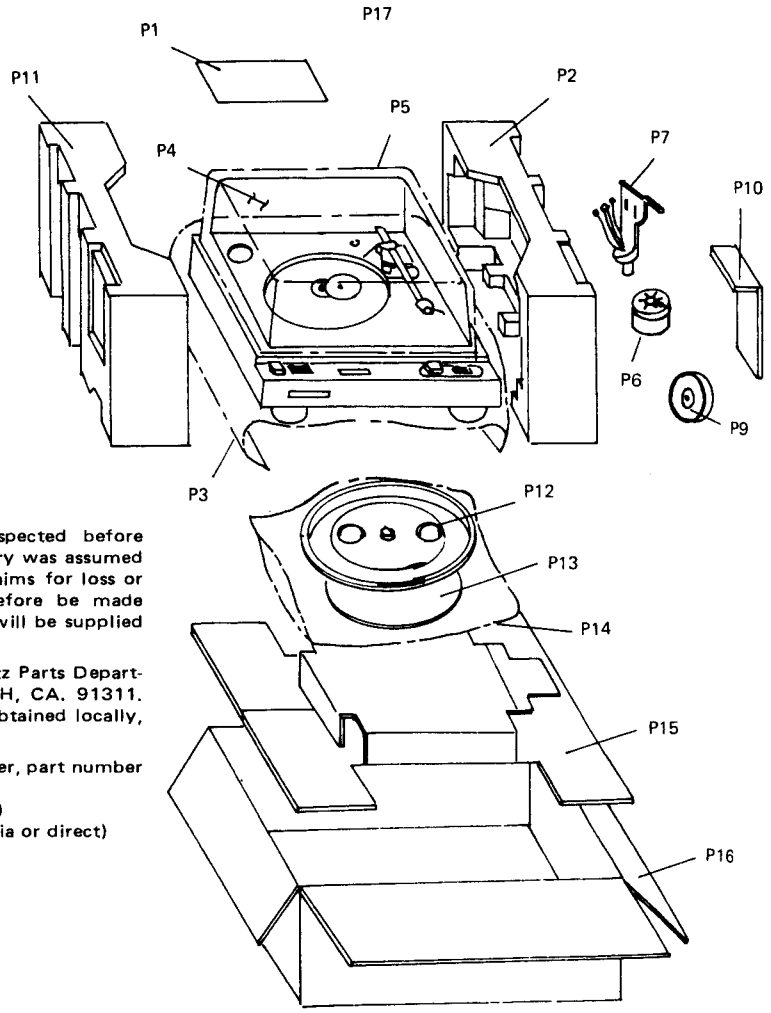
TYPE: Coreless, slotless, brushless
2 Phase 8-Pole Magnetic Field DC Servo
SPEED CONTROL RANGE; ±3.5%

	NOMINAL	LIMIT
WOW-FLUTTER (WRMS)	0.030%	0.080%
RUMBLE (DIN B)	–72dB	–60dB

TONE ARM:

EFFECTIVE LENGTH: 216±2MM
OVERHANG: 17MM
OFF SET ANGLE: 23.5°
TRACKING FORCE RANGE: 1.5-5 GRAMS
ADAPTABLE CARTRIDGE WEIGHT: 5-10 GRAMS
ANTI-SKATING FORCE RANGE: 0-4 GRAMS (CONICAL-ELLIPTICAL)

PACKING ASSEMBLY



NOTE:

1. This merchandise was thoroughly packed and inspected before leaving our factory. Responsibility for its safe delivery was assumed by the carrier upon acceptance of the shipment. Claims for loss or concealed damage, sustained in transit, must therefore be made upon the carrier. Forms required to file such claims will be supplied by the carrier.
2. Replacement parts may be ordered from the Marantz Parts Department, 20525 NORDHOFF STREET, CHATSWORTH, CA. 91311. ITEMS Such as screws and other hardware may be obtained locally, using the description provided.

When ordering replacement parts, specify model number, part number and description.

For telephone orders, dial: 1-800-423-5108 (toll free)
1-213-998-9333 (California or direct)
Ask for National Parts